

Rho 1000

Continuous inkjet production system

The Rho 1000 is the flagship of Durst's comprehensive range of flatbed and roll to roll UV inkjet printers. It is ideally suited for integration into existing production systems and is capable of achieving a production output of up to 500 boards per hour (125 x 80 cm), without interruption, around the clock, whilst ensuring optimum quality.

Overall advantages of the Rho 1000

The Rho 1000 continuous inkjet production system is the most flexible and productive system in the market:

- Automated continuous printing of boards and sheets
- Highest material flexibility (boards, sheets, roll media)
- Highest flexibility of sheet sizes (250cm width by any length)
- Fast media change enables the printing of a whole campaign using different media in one operation

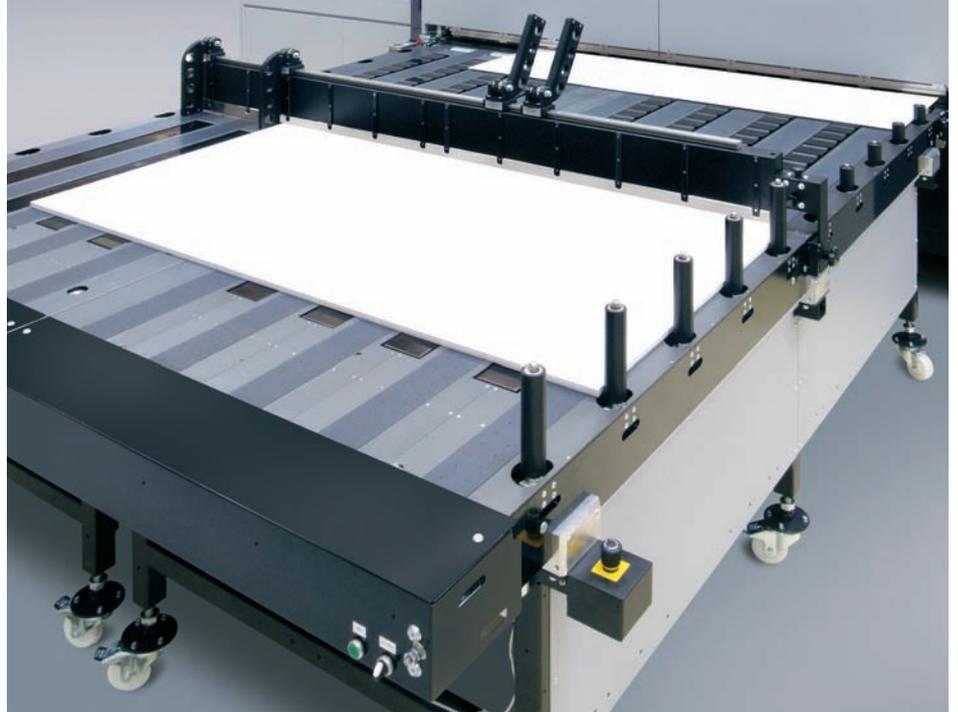


Media transportation features

The continuous production system has, at its core, the highest precision media transport mechanism available, which, unlike table systems, features a unique continuous vacuum belt. Auto loading and unloading tables complete the fully automated system.

Auto loading table

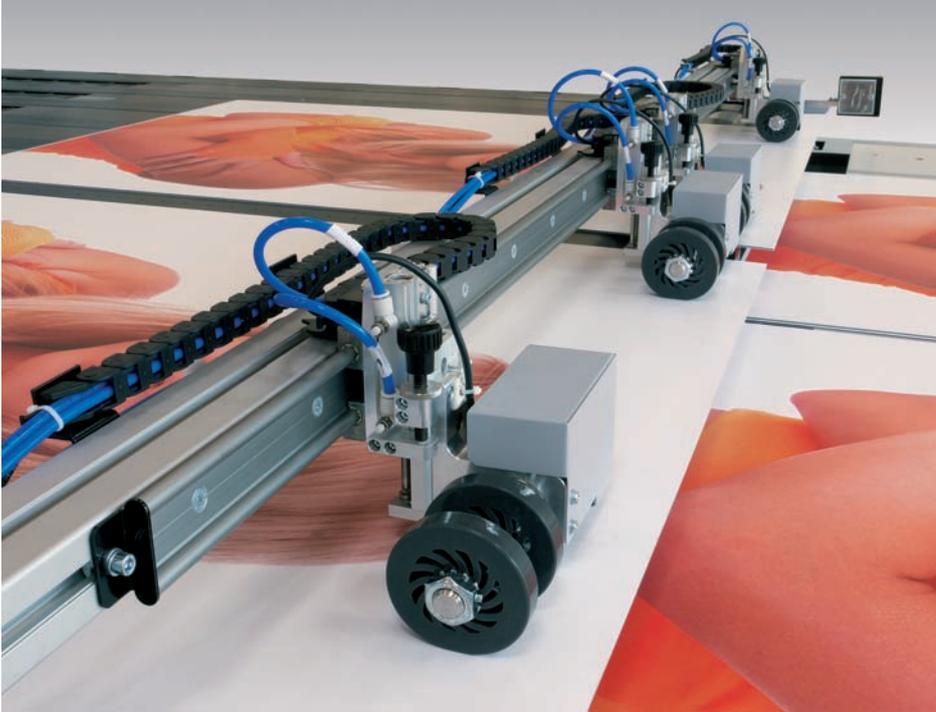
Vacuum belts advance the media whilst side guides guarantee precise media advancement in y-direction. Mechanical 2 point pin registration ensures exact media registration in the print direction and the left and right registration of media provides precise front to back registration, enabling parallel printing of up to 4 boards



Precise registration of media

For automated printing, accurate registration of media is essential. The registration accuracy of the Rho 1000 is +/- 0,5 mm. When printing a stack of media, this accurate registration means that the printed boards are ready for immediate guillotining. Precise front to back registration is achieved by right and left registration as boards and sheets are always registered at the same edges.

There is a gate for automatic printing of boards >3 mm thickness and the pull bottom sheet feed enables loading of media during printing. Media side guidance allows for parallel printing up to 4 sheets and there is front and back pin registration for ¾ automatic printing.



Auto unloading table

Vacuum belts advance the media and a tray or stacker takes up the sheets. Printing from stack to stack and directly loaded onto a pallet completes the automated process.

Vacuum belt transport system

The vacuum belt transport system has an encoder controlled step motor and the vacuum strength is user controlled, providing precise transportation of different board and sheet material. The strong vacuum is only applied directly below the printing area and there are 12 independent and computer controlled vacuum zones which ensure efficient media transport without the need for masking.

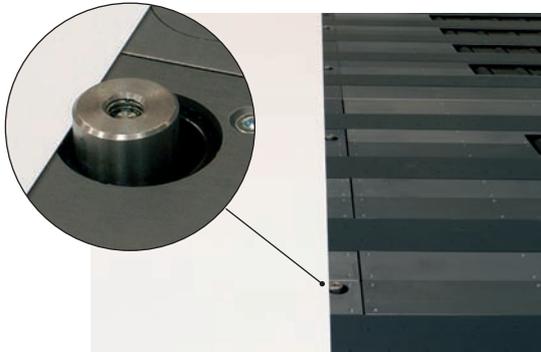


Four media handling modes

Full automation

Up to 4 parallel boards are loaded onto the auto feeding table in stacks

Mechanical 2 point pin registration ensures exact media registration and the right and left registration of boards ensures highest precision for reverse printing. Continuous printing optimises productivity and to complete the automated process, the unloading table transports the media to the auto stacker.



For total flexibility of operation, there are 4 different levels of automated media handling:

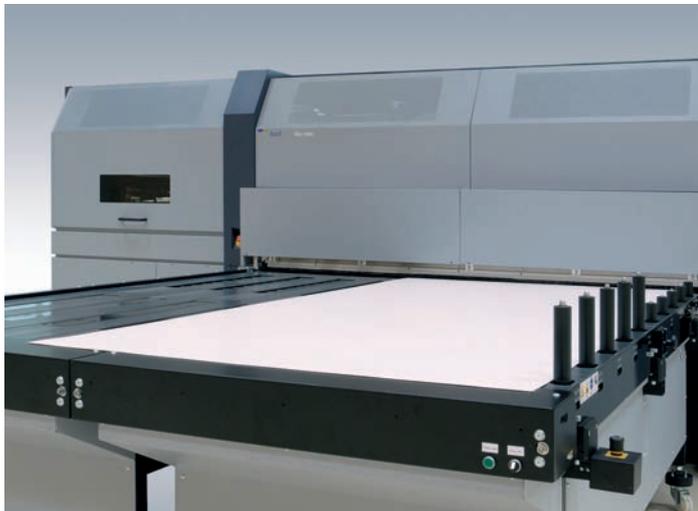
- Full automation
- Three quarter automation
- Manual
- Roll to roll



Three quarter automation

Single sheets are loaded onto the table

Then the same features as full automation apply: mechanical 2 point pin registration, right and left registration of boards for reverse printing, continuous printing for optimised productivity and the unloading table transports the media to the auto stacker.



Manual

Manual loading and unloading

For special applications such as printing very long panels, manual loading and unloading of single boards or sheets is very easily handled.



Roll to roll printing

Continuous printing onto roll media provides total media flexibility

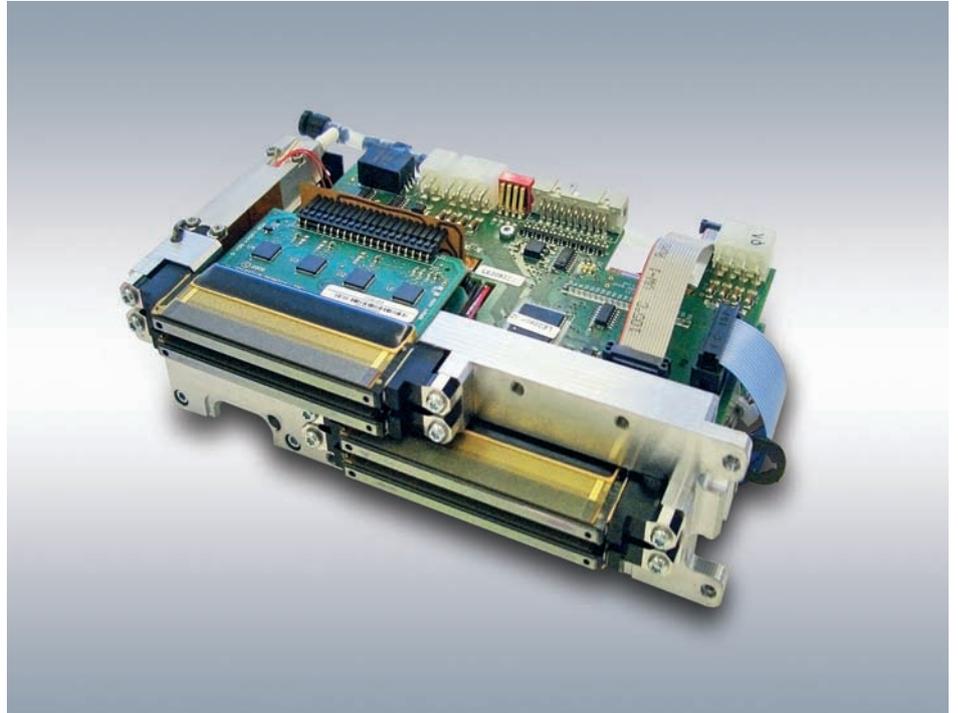
The Rho 1000 allows for a fast change from rigid roll media. Heavy rolls are loaded onto the roll media device and dancer rolls ensure precise tensioning of the media. The roll can be re-adjusted during printing and the printed roll is precision wound.

Variable Data Printing (VDP)

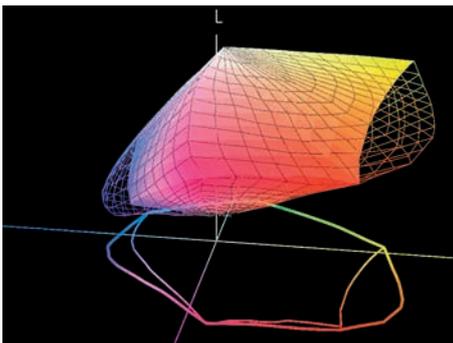
The Rho 1000 supports the new PDF/VT file format, offering the combination of high level graphic design features with VDP. Adoption of the ISO 16612-2 standard for the Caldera RIP enables processing of optimised multipage PDF files and the output is multiple ripped files, which are then transferred to the spooler of the Rho.

Durst Quadro Array printhead technology

The Rho 1000 has the latest Durst Quadro Array 30M printheads, which have 1024 nozzles per array, providing over 65,000 inkjet nozzles in total, for high productivity with uncompromised quality. The drop straightness, with a deviation of only 1.5 μ , provides an even higher image quality. The nozzle plate is now constructed using silicon oxide MEMS production technology with anisotropic etching for greater robustness and accuracy.



Rho 1000 Ink Options



Additional process colours extend the colour gamut as shown above

Rho ink colour options

Different ink options are offered on the Rho 1000 and these include: special light colours, light magenta and light cyan, for even finer colour graduations and perfect skin tones. Durst's pioneering white ink printing is also available and its special effect varnish. In addition, there is the further option of Process Colour Addition (PCA). The two process colour options, either orange and green or orange and violet, extend the colour gamut and provide perfect rendition of even difficult corporate colours.

Rho 1000 choice of inks

All Rho Inks are 100% VOC free and there is a choice of ink types ideally suited to the Rho 1000.

Rho Premium Rigid Ink

Rho Premium Rigid Ink offers the best adhesion on polycarbonate and acrylics in the market and achieves a Cross Hatch Test result of 0, according to ISO 2404 standard. It is designed for a wide range of board media such as soft foam boards, hard foam boards, polycarbonate, acrylics, metals and PVCs. It is also sufficiently flexible to be suitable for use on roll material providing the Rho 1000 user with an all purpose solution to their ink requirements.

Rho POP Ink

The Rho POP Ink is an economical alternative which is ideal for POP applications. Designed specifically for high volume printers such as the Rho 1000, it is optimised for PVC, styrene, polyester and various paper surfaces. Typical characteristics of the ink include: higher surface hardness, less flexibility and conformability than Rho Rigid inks whilst providing low odour and a 2-3 years' outdoor lightfastness.

Technical Data

General specifications

Dimensions:

Width: 716 cm (282 in.)
Length with roll tables: 510 cm (201 in.)
Length without roll tables: 230 cm (91 in.)
Height: 258 cm (102 in.)

Weight:

Approx. 7.500 kg (16.600 lb)

Safety standards:

Complies with currently valid guidelines



Printing specifications

Printing system:

Patented Durst flatbed system with Quadro® array technology for the finest quality and the highest speed.

Resolution:

600 dpi

Colours:

Standard: CMYK
Optional: Light Cyan and Light Magenta, White, spot colours (on request).

Inks:

UV-curable pigment inks for interior and exterior applications.

Ink supply:

Integrated ink tanks with 10 litre capacity per ink, refillable during the printing process. The refill inks are in 5 litre, non-returnable containers, easily disposed in collapsed condition, thus avoiding pollution to the machine and the environment.

Software/RIP:

Durst Rho Linux software for very fast processing with minimum storage capacity on the hard disk.
External Caldera RIP Server (GrandRip+)

Productivity:

up to 500 sheets/hour
(125 x 80 cm/4 x 2,6 ft.) with Continuous Board Printing Option

Media specifications

Media types:

Wide range of uncoated and coated materials – also textured surfaces such as hard foam sheets, soft foam sheets, aluminium, acrylic glass, polycarbonate sheets etc.

Maximum printing width:

250 cm (8 ft.)

Maximum printing length:

Only restricted by media length

Maximum thickness:

Standard: 40 mm (1.58 in.)
Industrial Version: 70 mm (2,75 in.)

Maximum media weight on belt:

Standard: up to 50 kg (110 lb)
Industrial Version: up to 120 kg (265 lb)

Smallest sheet size:

DIN-A3 – 29,7 x 42 cm (12 x 17 in.)

Registration of materials:

Materials are registered at the leading edge by means of fibre optic sensors or alternatively by mechanical front stops. An encoder measures the transport sequences, ensuring utmost precision in image alignment.

Location requirements

Space requirement:

Min. 10 x 8 m (33 x 26 ft.)

Maximum height:

2.400 m (8.000 ft) above sea level

Temperature range:

+15 °C to +30 °C (+59°F to 86°F)
non-condensing

Relative air humidity:

25 - 80 % non-condensing



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